PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 70203	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP 03/14613	International filing date *(day/month/year)* 19.12.2003	Priority date *(day/month/year)* 20.12.2002
International Patent Classification (IPC) or both national classification and IPC C07H17/08		
Applicant SYNGENTA PARTICIPATIONS AG et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
18.06.2004	07.01.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Bardili, W Telephone No. +49 89 2399-2132

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/14613

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-69 as originally filed

Claims, Numbers

1-7 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

   ☐ the entire international application,

   ☒ claims Nos. 7 with respect to industrial applicability

   because:

   ☒ the said international application, or the said claims Nos. 7 relate to the following subject matter which does not require an international preliminary examination (specify):

   see separate sheet

   ☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. are so unclear that no meaningful opinion could be formed *(specify)*:

   ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

   ☐ no international search report has been established for the said claims Nos.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/ or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

   ☐ the written form has not been furnished or does not comply with the Standard.

   ☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	3-5
	No:	Claims	1,2,6,7
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-7
Industrial applicability (IA)	Yes:	Claims	1-6
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claim 7 relates to therapeutic treatment of the human or animal body and hence to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(I) PCT).

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Clarity:

The disclaimer at the end of claim 1 contains the following errors.

(I) the meaning n = 2 is not in accordance with formula (I)
(ii) the disclaimer refers to B2 avermectin compounds, but formula (I) does not encompass B2 avermectin compounds as defined at page 3 of the description since B2 compounds have a 23-OH group which is not present in the claimed compounds (see moiety A-B).

Novelty:

D1/ Bioorg. Med. Chem. Lett. 8 (2000), 19-26 discloses 4"-phenyl ether derivatives of avermectin B1a. Ether 6a, which falls within the general formula (I) of claim 1, has been disclaimed from claim 1; however, the ether 5a with n = 0 has not been disclaimed and appears to fall within the scope of claim 1. Hence, D1 is novelty destroying to claims 1 and 2.

D2/ Int. J. Parasit. 26, 1227-35 (1996) discloses a number of avermectin monosaccharide derivatives, in particular compounds 32, 33, 36, which fall within the scope of claim 1 (n = 0). The citation also mentions that these compounds have some activity against certain parasites in cattle (see table 1 of the reference). Therefore, claims 1, 2, 6 and 7 lack

novelty.

The other documents of the search report are not relevant to the novelty of the claimed subject-matter because

the avermectin disaccharide 1i mentioned in D3/ J. Agric. Food Chem. 42 (1994), 1786 has been disclaimed from claim 1.
the avermectin compounds of D4/ EP-A-456 509 lack at least one 3'-methyl group
the avermectin compounds of D5/ EP-A-519 731 are modified at position 4-methyl

Inventive step:

The following observations apply to those parts of the claims that are novel.
The closest prior art is represented by D2 (avermectin monosaccharides) and D3 (avermectin disaccharides). The object of the invention appears to be the provision of further compounds as agents against parasites. To that end the application suggest modifying the 4'- and 4"-position of avermectin B1 by an alkoxymethyl substituent. Several prior art documents, in particular D2, D3, D4 (see claim 1) and D5 (see claim 1) disclose the 4'- and 4"-alkoxyalkyl modification in a variety of avermectin derivatives having some activity against parasites. The subject-matter of claims 1, 6 and 7 hence lacks inventive step.

The preferred embodiments according to claims 2-5 are not inventive for similar reasons.

Medical treatment:

For the assessment of the present claim 7 on the question whether it is industrially applicable, no unified criteria exist in the PCT Contracting States. The patentability can also be dependent upon the formulation of the claims. The EPO, for example, does not recognize as industrially applicable the subject-matter of claims to the use of a compound in medical treatment, but may allow, however, claims to a known compound for first use in medical treatment and the use of such a compound for the manufacture of a medicament for a new medical treatment.